

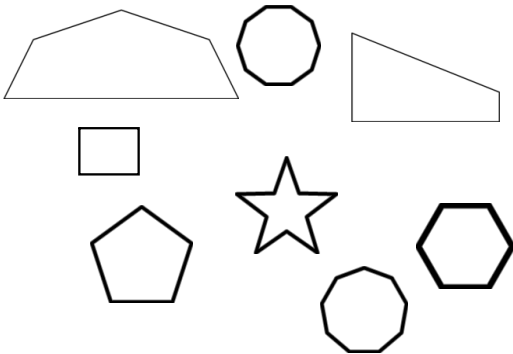
1.6 Classify Polygons

polygon--closed plane figure, whose sides are all segments

- sides have a common endpoint and are non collinear
- each side intersects exactly 2 other sides

vertex--each endpoint of a side

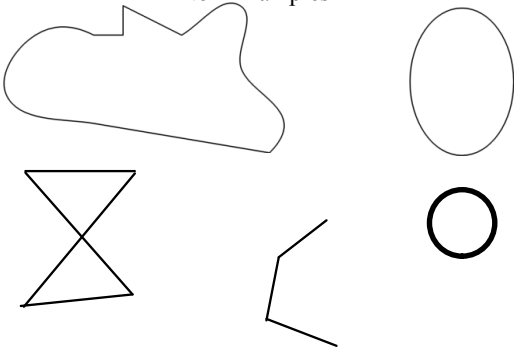
Examples



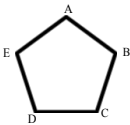
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Non-Examples




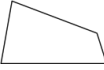


Name by the vertices, in consecutive order



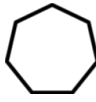



polygon ABCDE  
polygon DCBAE

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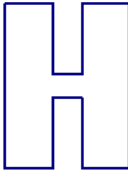
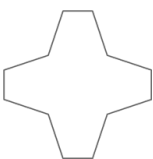
Types of Polygons		
Shape	# of sides	Name
	3	Triangle
	4	Quadrilateral
	5	Pentagon
	6	Hexagon

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	7	Heptagon
	8	Octagon
	9	Nonagon
	10	Decagon

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11-gon

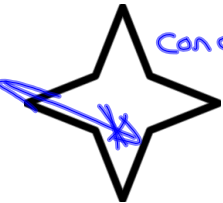
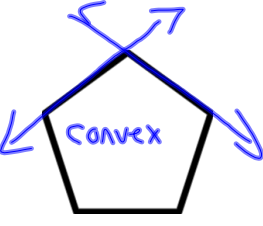


12-gon      Dodecagon

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Convex--A polygon is convex, if the line containing a side does not contain points on the interior of the polygon

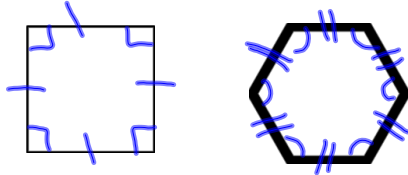
Concave--Not convex



convex      Concave

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Regular Polygon--convex polygon where all of the sides are congruent, and all of the angles are congruent

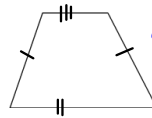


equilateral--all sides are congruent  
equiangular--all angles are congruent

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Classify the following figures as:

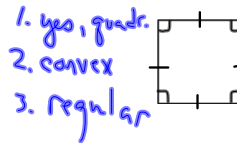
1. • polygon or not (if polygon, what type)
2. • convex or concave
3. • equilateral, equiangular, regular or none



1. yes, quadr.
2. convex
3. none



1. no

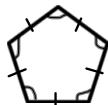


1. yes, quadr.
2. convex
3. regular

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1. yes nonagon
2. concave
3. none



1. yes, pentagon
2. convex
3. regular



1. yes, octagon
2. concave
3. none

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Find the perimeter of ABCDE

A(0, 4) B(4, 0) C(3, -4) D(-3, -4) E(-3, 1)

$$AE = 4.24$$

$$AB = 5.66$$

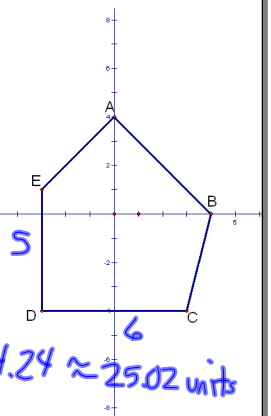
$$BC = \sqrt{(4-3)^2 + (0-(-4))^2}$$

$$= \sqrt{1^2 + 16}$$

$$= \sqrt{17}$$

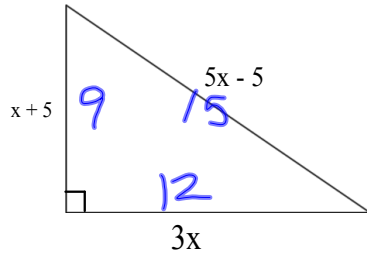
$$= 4.12$$

$$P = 5 + 6 + 4.12 + 5.66 + 4.24 \approx 25.02 \text{ units}$$



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If the perimeter of the triangle below is 36 units, find the length of the sides.



$$3x + x + 5 + 5x - 5 = 36$$
$$x = 4$$

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